

The tumble-weed of the West.—In this plant we have an excellent illustration of the effect of climate upon the physical development of the plant body. In the east it is the familiar *Amarantus albus*, and so far as I have observed never shows any tendency to take upon itself the “tumbling” habit, but grows into an irregularly branching plant which remains fixed to the ground long after it dies at the close of the season. Upon the plains and prairies of the west, however, it grows into a compact plant, with stout curving branches, of such length and curvature as to give to the whole an approximately spherical form. The autumn and early winter winds break off the main stem near the root, and away the whole goes rolling, tumbling and bounding over the ground, often for miles. In Coulter's *Rocky Mountain Botany*, by an accidental transposition of type, the related *A. blitoides* is called the “tumble-weed.” This latter species is, however, a prostrate plant, reminding one of the familiar purslane, and does not take the spherical form necessary to the “tumble-weed.”

It may be interesting to note in this connection that upon the steppes of Russia, north of the Black Sea, an entirely different plant becomes a veritable “tumble-weed.” Henfrey, in *The Vegetation of Europe*, thus describes it: “One curious plant of the thistle tribe has attracted the notice of most travellers, the ‘wind witch,’ as it is called by the German colonists, or ‘leap-the-field,’ as the Russian name may be translated. It forms a large globular mass of light wiry branches interlaced together, and in autumn decays off at the root, the upper part drying up. It is then at the mercy of the autumn blasts, and it is said that thousands of them may sometimes be seen coursing over the plain, rolling, dancing and leaping over the slight inequalities, often looking at a distance like a troop of wild horses.”

On the island of Martha's Vineyard, Mass., the wild Indigo (*Baptisia tinctoria*) grows into a globular form, breaks off at the root in the autumn, and tumbles about much like the genuine “tumble-weed” of the west.

C. E. BESSEY.

EDITORIAL.

MUCH HAS BEEN SAID in the GAZETTE about teaching botany, and it may be thought that the chief end of botanical study is teaching, but much as we would exalt the teacher's profession there is another work for the professional botanist. If teaching botany is all, what is to become of the science? Are we to teach the same things over and over again, with an occasional new inspiration wafted across from the German laboratories, and simply raise up teachers to follow in our footsteps? Unfortunately, in this country the professional botanist is almost of necessity a teacher only, with his time fully occupied in the drudgery of the laboratory and lecturing upon the very rudiments of his science. If our endowments for botanical teaching have not now secured us a perennial succession of teachers, then has all our teaching been in vain. What we now need is endowment for botanical research, that our country and our botanists may do themselves credit. This does not necessarily mean a great

outlay of money, but simply a supply of trustworthy assistants for teaching, that the professor may have ample time for research. Time is what is needed vastly more than money, and when our boards of control begin to appreciate the reflex influence of original investigators upon our whole system of education, they may see the wisdom of the necessary assistants. It is not to be expected that we can soon emulate foreign countries in the matter of opportunities for original research, but it is a thing that our well-equipped universities should begin seriously to consider, and the first and most practicable step is to give professors more time for special work. Furnishing cheap or temporary assistants will not answer the purpose, but they should be of such proficiency that if desirable the entire work of instruction can be left to their care. In several universities we could mention, an abundance of material is stored up, with all needed accessories of library and apparatus, only waiting for time to become productive. The amount of dead capital laid up in such equipment in this country is astonishing. In such cases, an endowment for botanical research would mean simply a sufficient outlay to pay a reasonable salary to a competent assistant.

Of course many professors have neither ability nor inclination to pursue original investigations, and for such we make no plea. But there are some who have already shown their ability and desire in this direction, in spite of many other time-consuming duties, and it is for such that we urge a more liberal allotment of time. It has been said that our boards of trustees can not be made to understand that anything is needed in a university except teachers and equipment for teaching, but we have just that faith in the growing intelligence of our people, which leads us to believe that we will not long be without some such provision as we have suggested.

THE NEED OF giving careful heed to the work of German botanists, both of to-day and of earlier times, is illustrated anew by the experience of Dr. Bessey, who informs us that he finds in a German work just at hand that the adventitious character of the inflorescence of *Cuscuta glomerata*, discovered by him, and brought to the attention of the American Association a year and a half ago, and thought to be a new fact by all American botanists, has been known across the water for some time. He will have something further to say in regard to the matter in the March number of the *American Naturalist*. This case, which happens to an eminent investigator whose extensive knowledge of German botanical literature is well attested by his writings, gives us the opportunity of saying that we have been long inclined to think that not enough attention, as a rule, is paid by our less advanced workers to the historical study of the subjects they may have in hand. We do not overlook the fact that few have the ample library facilities afforded the German student. Much can be done to remedy this disadvantage, however, by purchasing the separate papers which most authors now have printed, and which can be obtained by mail through foreign dealers.

THE STRIKING similarity between parts of the biographical sketch of Dr. Gray, published in the January GAZETTE, and the account of his life, from the

pen of Dr. C. S. Sargent, published in the *New York Sun* of January third and reprinted by the author in pamphlet form, makes it necessary for us to say, in simple justice to the GAZETTE, that our article was sent to the printers on December 23 and the proof of it corrected and returned before we had seen Dr. Sargent's paper. The reader of the two will notice that the GAZETTE's sketch is much fuller in its account of Gray's early life, while Dr. Sargent's contains a much more extended history of his botanical labors. Having both had access to the same source for our facts the two papers naturally agree closely in some points while at the same time they supplement each other.

THE EDITORS OF THE GAZETTE intend to make their June number one for collectors. This will include not only directions for collecting and preserving all forms of plant life, but all the details of herbarium work. Many specialists will furnish notes pertaining to their own departments, but this early notice is given, with the request that all collectors in every department and all herbarium workers send us notes concerning the collection, transportation, preservation, and final arrangement of plants. The coöperation of botanists will make this number a valuable collector's hand-book.

THE PORTRAIT of Dr. Gray, which we published in our last issue, was made from a photograph taken in 1880. It was selected by Mrs. Gray from the numerous ones in her possession as being the best likeness of the Doctor.

OPEN LETTERS.

Some Variations.

In July, 1885, I collected, in Somerset county, Maine, several specimens of *Botrychium matricariæfolium*, in which the fertile segments were more compound than in the usual forms, and the sterile segments were smaller, especially narrower, and had sporangia around the edges. Curious looking specimens when compared with the ordinary forms beside which they grew.

In August, at Wenscott Reservoir, R. I., I collected a handful of *Monotropa uniflora*, one specimen of which had seven petals, twelve stamens, and a six-celled ovary; another had six petals, thirteen stamens, and a six-celled ovary. Several other specimens had some of the parts slightly multiplied, but not so much as these two.

Providence, R. I.

J. FRANKLIN COLLINS.

Botany at Harvard.

With your permission I should like to explain the statement made on page 397 of the GAZETTE for December, as I understand that some readers have been puzzled to understand why the cryptogamic laboratory of Harvard University is separated from the phænogamic laboratory and united with the zoological department, as appears to be the case from the statement in the GAZETTE. One of the elective courses in the college is called elementary biology, and in that course the rudiments of both botany and zoology are taught by the study of a few types, a plan pursued in several colleges of the country. This course is given in a large-sized laboratory at the Agassiz Museum, and the zoological portion is taught by Prof. Faxon, while it is my duty to teach the